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REMARKS ON THE FILTERABILITY OF BACILLUS BRONCHISEPTICUS *

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Like many other micro-organisms *Bacillus bronchisepticus* has evidently been discovered and named many times. Theobald Smith¹ showed that some of Torrey's strains were identical with a bacillus causing an epidemic form of pneumonia in guinea-pigs, a disease which he had studied for some years. He also pointed out that very similar or identical bacilli had been described by previous workers. Interest in its comparative study was aroused by the work of McGowan, Ferry, and Torrey, which pointed to the possibility of its being the cause of canine distemper.

Ferry² made experiments to determine whether or not the passage of *B. bronchisepticus* could be brought into line with the claims of Carré that the virus of distemper is filterable. He goes into very satisfactory detail concerning the method of testing the filters he used (method of Bulloch and Craw), but unfortunately does not give the details of his filtration experiments. However, it is evident that 1 Berkefeld N. candle and 6 Pasteur F. candles were used, and that the filtration was conducted at room temperature during 1 hour and at 3 pressures, gravity 15 pounds negative and 225 pounds positive. He does not state at which of these pressures nor with which filters the positive results were obtained.

Since Theobald Smith¹ has demonstrated the identity of the bacilli mentioned, it is only fair to call attention to the fact that he had casually noted that the bacillus of guinea-pig pneumonia passed the small Berkefeld filter, and had asked me to go over and test his observations more thoroughly. This was done in a series of experiments.³ In 2 fractional filtration experiments with the small Berkefeld No. 5, from 75 to 80 c.c. of filtrate came over before any bacilli passed the filter—thus was proved the absence of any gross leakage. The same filters did not allow *B. coli* to pass.

* Received for publication February 24, 1916.

¹ Jour. Med. Research, 1913, 29, p. 291.

² Jour. Path. and Bacteriol., 1915, 19, p. 488.

³ Wherry: Jour. Med. Research, 1902, 8, p. 322.

There is no doubt, however, that many of the Berkefeld filters show leakage. I tested 12 new candles a few years ago and found that only one held back *B. pyocyaneus* from the first portions of the filtrate. Contrary to what is expected from some of the observations of Bulloch and Craw, it has been my experience that an efficient candle may be cleaned by boiling in sodium-carbonate solution and resterilized by autoclaving a number of times without impairing its efficiency for such an organism as *B. pyocyaneus* in broth cultures.